REMARKS

Applicants and the undersigned are most grateful for the time and effort accorded the instant application by the Examiner. The Office is respectfully requested to reconsider the rejections presented in the outstanding Office Action in light of the following remarks.

Claims 1-9 were pending in the instant application at the time of the outstanding Office Action. Of these claims, claims 1, 5, and 9 are independent claims; the remaining claims are dependent claims. Claims 4 and 8 have been rewritten. The Applicants, however, intend no change in the scope of the claims by the changes made by this amendment. It should be noted this amendment is not in acquiescence of the Office's position on the allowability of the claims, but merely to expedite prosecution.

Claims 1-9 stand rejected under 35 U.S.C. § 101 as being directed towards non-statutory subject matter. The independent claims had previously been amended to address this issue. Based upon the arguments below, reconsideration and withdrawal of this rejection is respectfully requested.

Specifically, the outstanding Office Action asserts that no the instant invention has no specific purpose or use. Further, the Office Action asserts that the instant invention does not produce a final result or a useful, concrete, and tangible result. Thus, the outstanding Office Action asserts that the claimed invention has no real world function and thus is not statutory. This rejection is respectfully traversed. Due to the new ruling with respect to Ex parte Lundgren, it is respectfully submitted that these claims are,

in fact, statutory. This recent board decision dealt primarily with the rejection of the technological arts test, in which the Board cited Diamond v. Diehr. Simply put, there are three unpatentable "things": laws of nature, physical phenomenon, and abstract ideas. Lundgren tried to patent a business method where the claims did not mention any hardware. The Board ruled that the claims were in fact statutory, because the claims did not reflect a law of nature, were not a physical phenomenon, and were not abstract (the specification fully enabled the claims and provided well-explained steps and procedures to carry out the invention).

In the instant invention, the claims do present a very practical utility and real-world result, as shown in the specification. Specifically, the claims perform a method that allows for the effective the classification of data objects, as shown in the background of the invention and summary of the invention. The instant invention provides an improved way to classify large data sets of information which constitute data objects. This is a necessary and important step in data exploration, and has much real-world utility and result, as shown in the detailed description and the corresponding appendix. Thus, in similar fashion, reconsideration and withdrawal of this rejection is respectfully requested.

Further, it is respectfully submitted that the allegations of the outstanding Office Action that state the claimed invention has no useful result are incorrect. The claimed invention produces classes in which the objects of data belong. By carrying out the method and executing the system of the claimed invention, data objects can be classified. This classification provides many practical utility, such as allowing for the further

understanding and analysis of data, and effectively undertaking data exploration in an environment where more and more data is acquired and utilized.

Claims 1-9 also stand rejected under 35 U.S.C. 112 as a result of being standing rejected under 35 U.S.C. 101. This rejection is respectfully traversed upon the grounds of explanation given above. Based upon the current amendment of the claims, this rejection is neither applicable nor valid. Further, Applicant interprets this explanation from the examiner as an assertion that the claims are not enabled by the specification because they are not "practical". Applicant respectfully traverses the rejection on that basis as well, because the claims find full support in the specification as filed. Thus, reconsideration and withdrawal of this rejection is respectfully requested.

Claims 4 and 8 also stand rejected under 35 U.S.C. 112, second paragraph for lacking antecedent basis. Claims 4 and 8 were amended to address this issue. Reconsideration and withdrawal of this rejection is respectfully requested.

Broadly speaking, the present invention relates to the classification of objects. This classification is achieved using the best boolean expression that represents the most optimal combination of the underlying features. This boolean expression is optimized through the minimization of the error of the expression which defines the query. Specifically, the instant invention determines a query function that establishes the properties an item returned should possess. These properties are exemplified by the expressions in the query. The items which best define the query are determined. The error to be minimized in determining the best definition of the query is the false positives

and false negatives of the query. These two steps represent a type of the classification of the instant invention. It is then decided whether the item belongs in the query based upon the selected properties. This decision is considered as cross-validation of the classification.

Claims 1-9 are rejected under 35 U.S.C. 102(e) as being anticipated by Marshall. In contrast to the present invention, Marshall relates, as best understood, to a method for classification to ordinal categories by nesting binary partitions of data. Marshall does not discuss of disclose optimization of the boolean expression which defines the query. Rather, Marshall discusses binary partitions of ordinal data, and the nesting of those partitions. Further, there is no minimization of the error of the expression, let alone analysis of such error.

The most immediate failure of the prior art in teaching the invention as claimed is the failure of Marshall to teach a "identifying properties of objects" and "formulating a query to identify objects having properties of interest" which goes to the heart of the present invention. In the outstanding Office Action, the Examiner asserts that the rules (1) and (2) on page 2724 of Marshall are queries, the symbols F, T, U, and H are properties of interest, and the set formed by those properties of interest are objects. It is respectfully submitted that a crucial part of the instant invention relates to formulating a query to identify objects having properties of interest. There is no teaching or suggestion in Marshall as to how the query was formulated. Rather, Marshall compares all of the boolean combinations of the data to find a binary partition of the data. This is in no way

comparable or suggestive of formulating a query to identify objects having properties of interest.

The partition of Marshall provides a split of the data such that the data is homogenous with respect to one outcome variable. There is no identification of properties of interest in this split, nor is there any suggestion or hint of utilizing more than one property as a basis on which to split the data. Thus, it is respectfully submitted that there is a clear difference between partitioning data to find a homogenous split of data with respect to one outcome variable and formulating a query to identify objects having properties of interest.

Further, Marshall fails to teach or suggest "selecting properties of the objects to compare with object properties included in the query". Through the partitioning of Marshall, there is no opportunity to specifically select properties of the objects to compare with object properties included in the query. Comparing properties during partitioning is not equivalent to specifically selecting properties of the objects to compare with object properties included in the query. A query has not even been formulated during the partitioning phase of Marshall. Thus, comparison during the partitioning phase cannot be read upon comparison to properties included in the already formulated query.

Regarding the rejection of independent claims 1, 5, and 9 the Examiner cites the SPAN approach to classification, using a binary approach to classify ordinal data. This is in stark contrast the independent invention, which has no such limitations as to type of

data or to a binary approach. Specifically, the independent invention states a method of "identifying properties of objects, formulating a query to identify objects having properties of interest, selecting properties of the objects to compare with object properties included in the query, and determining if based on the selected properties if the object belongs in the query".

For these reasons alone, anticipation is improper because, at the very least, "[a]nticipation requires the disclosure in a single prior art reference of each element of the claim under construction." W.L. Gore & Associates, Inc. v. Garlock, 721 F.2d 1540, 1554 (Fed. Cir. 1983); see also In re Marshall, 198 U.S.P.Q. 344, 346 (C.C.P.A. 1978). Thus, reconsideration and withdrawal of this rejection is respectfully considered.

In view of the foregoing, it is respectfully submitted that independent claims 1, 5, and 9 fully distinguish over the applied art and are thus are in condition for allowance. By virtue of dependence from what are believed to be allowable independent claims, it is respectfully submitted that claims 2-4 and 6-8 are also presently allowable.

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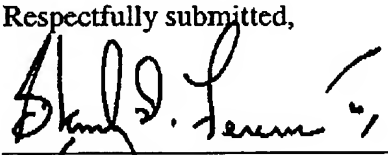
In summary, it is respectfully submitted that the instant application, including claims 1-9, is presently in condition for allowance. Notice to the effect is earnestly solicited. If there are any further issues in this application, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,



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